

the number of grubs of the first four species of table 4 were never present in the abundance which the catch of the adults would have suggested.

In a light trapping experiment over a period of five years at Saratoga Springs, New York, 14 species of *Phyllophaga* were taken. Their flight periods varied from 101 days to 39 days with a total flight of over four months. In two of the species, *P. anxia* and *P. fusca* females were taken in slightly greater numbers than the males.

Four New Polydesmoid Millipeds from North Carolina (Myriapoda).

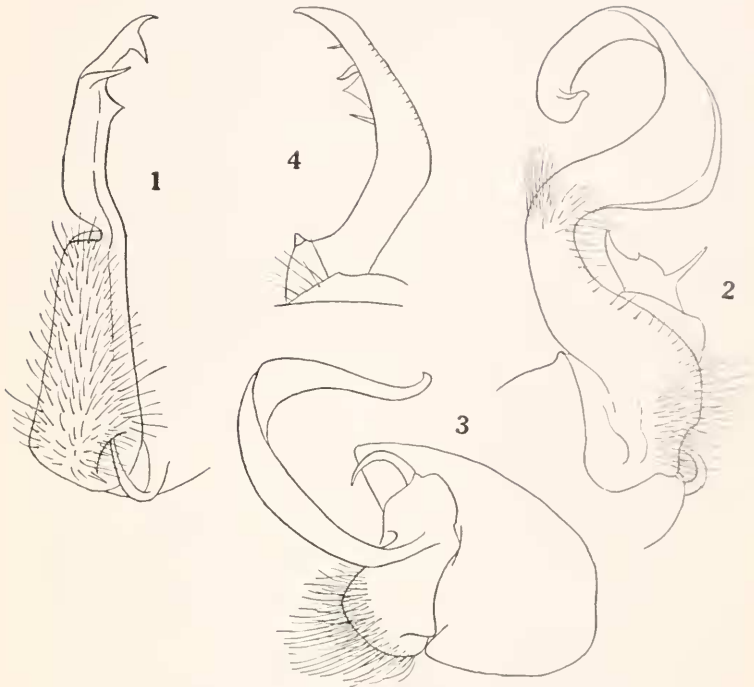
By RALPH V. CHAMBERLIN, University of Utah,
Salt Lake City.

Of the four species described in the present paper, the first three are based upon material collected by Prof. A. S. Pearse in the Pisgah National Forest, North Carolina, in 1933. The *Brachydesmus* is based upon specimens collected by Dr. Wm. S. Cornwell in 1934 and by Mrs. Nelle B. Causey in 1939 on the Duke University grounds. The holotypes are retained by the author. Paratypes of *Mimuloria furcifer* and of *Apheloria waccamana* are deposited at the Philadelphia Academy of Sciences.

Mimuloria furcifer new species (Fig. 1).

A clearly larger species than *ducilla*, distinguishable at once in having the spots of the middorsal line shorter, subcircular, instead of extended along caudal border and ordinarily reaching light areas of the keels; dorsum in types dark chocolate to nearly black except for the median spots and the subquadrate spots on the keels which are yellow. In the preserved specimens the legs are yellow, the antennae chocolate brown.

This species in the form of the gonopods of the male is very similar to *ducilla*, but is at once to be separated by the presence of a distinct angulation on the upper edge of the telopodite whereas in *ducilla* that edge is smoothly curved. See further figure 1.



EXPLANATION OF FIGURES. 1. *Mimuloria furcifer*, sp. n. Right gonopod of male, mesoventral view. 2. *Sigmoria brachygon*, sp. n. Right gonopod of male, subventral view. 3. *Apheloria waccamana*, sp. n. Left gonopod, subventral view. 4. *Brachydesmus dux*, sp. n. Left gonopod, ectal view.

Width of male 8.2 mm., as against 6.25 mm. in *ducilla*.

Locality—NORTH CAROLINA: Pisgah National Forest, Asheville. Four specimens taken by Prof. A. S. Pearse, June 3, 1933.

Sigmoria brachygon new species (Fig. 2).

A robust form with wide keels continuing the slope of the dorsum.

Dorsum in the preserved types a dull grayish brown, with the keels in part more yellowish, but the color not sharply defined or set off. Legs yellow. Types probably not in full color.

No sternal or coxal processes. Characterized by the form of the broad, laminate gonopods as illustrated.

Length, 43 mm.; width, 11 mm.

Locality.—NORTH CAROLINA: Pisgah National Forest, Glen Bald. Male and female taken by Prof. A. S. Pearse, June 3, 1933.

Apheloria waccamana new species (Fig. 3).

Dorsum from dark chocolate to black; keels yellow over entire length, the dorsal black extending outward in an angle just back of anterior corner; a median dorsal series of yellow spots, one spot in front of caudal margin of each tergite; collum with entire keels yellow, but dark color extending outward along each border, and with two spots on median line, one larger one at anterior border and a smaller one at caudal; cauda yellow; antennae dark; legs yellow.

Gonopods of male as drawn in fig. 3.

Length of male *holotype*, 36 mm.; width, 9.8 mm.

Locality.—NORTH CAROLINA: Lake Waccamana. Types taken by Prof. A. S. Pearse, April 16, 1933, in "Pisgah National Forest" and in the Duke University Forest.

Brachydesmus dux new species (Fig. 4).

General color of dorsum and antennae a somewhat horn brown, the keels not lighter. Legs a paler brown.

Head clothed with short erect setae, these not dense. Sulcus across vertex of head distinct.

Collum distinctly wider than head proper, but narrower than head with mandibles and narrower than second tergite. A row of small setigerous nodules or tubercles followed by a series of intermediate size along caudal border.

Ordinary tergites with keels on about level with mid-dorsal region, two transverse rows of large distinct tubercles and a row of small ones along caudal border; keels with three lateral teeth.

The species is best identified from the structure of the gonopods of the male of which a drawing is given, fig. 4.

Length, 10 mm.

Locality.—NORTH CAROLINA: Duke University campus.